

Environmental Sensors

Temperature & Humidity Sensors

Probe-Style Temperature & Combination Sensor



E-STSM-E7
E-STHSM-E7

- Temperature Sensor (E-STSM-E7)
 - Applications from -4 to 140°F (-20 to 60°C).
 - Temperature accuracy:
 - ◆ ±1.26°F (±0.70°C) for -4 to 41°F (-20 to 5°C).
 - ◆ ±0.72°F (±0.40°C) for 41 to 140°F (5 to 60°C).
- Temperature/Humidity Sensor (E-STHSM-E7)
 - Applications from -4 to 140°F (-20 to 60°C) and 0 to 90% relative humidity (operating and storage).
 - Temperature accuracy:
 - ◆ ±0.90°F (±0.50°C) for -4 to 14°F (-20 to -10°C).
 - ◆ ±0.72°F (±0.40°C) for 14 to 140°F (-10 to 60°C).
 - Humidity accuracy (at 86°F/30°C):
 - ◆ 10 to 80% relative humidity, ±3%
 - ◆ 80 to 90% relative humidity, ±4%
 - Supports dew point measurement
- Length: 7 feet.
- Includes an RJ45 coupler to extend the sensor up to 1000 feet (305 m) using CATx cable (minimum 24AWG).

Temperature/Humidity Sensor with 3-Digit 7-Segment LCD Display – 2" Character Height



E-STHS-LCDW

- Use to detect and view real-time value of the sensor's temperature or humidity reading.
- Three-digit, seven-segment display with °F, °C and % indicators.
- Applications from -4 to 140°F (-20 to 60°C) and 0 to 90% non-condensing relative humidity.
- Temperature accuracy:
 - ±0.72°F (±0.4°C) for 14 to 140°F (-10 to 60°C).
 - ±0.90°F (±0.5°C) for -4 to 14°F (-20 to -10°C).
- Humidity accuracy (at 86°F/30°C):
 - 10 to 80% relative humidity, ±3%
 - 80 to 90% relative humidity, ±4%

Temperature Sensor



E-ST

- Applications from 32 to 122°F (0 to 50°C).
- Accurate to within ±0.9°F (±0.5°C).
- High resistance to external influences on the cable due to digital output signal.

Temperature/Humidity/Dew Point Combination Sensor



E-STHSB

- Temperature/Humidity/Dew Point Sensor
 - Applications from -4° to 140°F (-20° to 60°C) and 0% to 90% relative humidity.
 - Temperature accuracy:
 - ◆ ±0.90°F (±0.50°C) for -4 to 14°F (-20 to -10°C).
 - ◆ ±0.72°F (±0.40°C) for 14 to 140°F (-10 to 60°C).
 - Humidity accuracy (at 86°F/30°C):
 - ◆ 10 to 80% relative humidity, ±3%
 - ◆ 80 to 90% relative humidity, ±4%
 - Supports dew point measurement.
- Supports CAT5/5e/6/6a cable (24 AWG) up to 1,000 ft (305 m) (not included).

Fan-Aspirated Temperature/Humidity/Dew Point Sensor, Low Self-Heating



E-STHS-LSH

- Fan-Aspirated Temperature/Humidity Sensor compensates for parasitic heating due to electrical power dissipation and/or exposure to solar radiation.
 - Internal fan constantly draws air in over the sensor, providing highly accurate temperature readings.
 - Ideal for installations where steep temperature gradients are common, and where there is little to no air flow.
 - ◆ Use in freezers where there is intermittent air flow.
- Applications from -4 to 140°F (-20 to 60°C) and 0 to 90% relative humidity.

Temperature/Humidity/Dew Point Sensor, DIN Mounted



E-STHSB-D

- Applications from -4 to 140°F (-20 to 60°C) and 0 to 90% relative humidity.
- Temperature accuracy:
 - ±0.90°F (±0.50°C) for -4 to 14°F (-20 to -10°C).
 - ±0.72°F (±0.40°C) for 14 to 140°F (-10 to 60°C).
- Humidity accuracy (at 86°F/30°C):
 - 10 to 80% relative humidity, ±3%
 - 80 to 90% relative humidity, ±4%
- Supports dew point measurement.
- DIN mountable

Low-Cost Precision Temperature/Humidity Sensor



E-STHS-PRC

- Applications from 14 to 140°F (-10 to 60°C) and 10 to 80% relative humidity.
- Accurate to within ±0.2°F (±0.1°C) and ±1.8% relative humidity.
- Supports dew point measurement

Environmental Sensors

Temperature & Humidity Sensors (continued)

Strap-On Pipe Temperature Sensor, Spring-Loaded



E-STSP-SL-7

- Mount to the outside of an insulated metal pipe (up to 1/4" wall).
 - Copper contact transmits surface temperature to thermal sensor.
 - Spring-loaded contact enables minimal removal of pipe insulation.
 - NEMA 1 and IP20 rated metal enclosure
 - Applications from -40 to 185°F (-40 to 85°C).
 - Accurate to within $\pm 1.0^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$).
- Response time: <1 minute for temperature changes of $\pm 2^{\circ}\text{F}$.
 - Length: 7 feet.
 - Includes an RJ45 coupler to extend the sensor up to 1,000 feet using CATx cable (minimum 24AWG).

Pipe Temperature Sensor



E-STSP-7

- Mount to the outside of a thin walled steel, copper, or aluminum pipe (up to 1/4" wall).
 - Copper contact transmits surface temperature to thermal sensor.
 - Weatherproof enclosure designed to IP65 specifications.
 - Applications from -40° to 185°F (-40° to 85°C).
 - Accurate to within $\pm 1.0^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$).
 - Response time: <1 minute for temperature changes of $\pm 2^{\circ}\text{F}$.
- Length: 7 feet.
 - Includes an RJ45 coupler to extend the sensor up to 1,000 feet using CATx cable (minimum 24AWG).

Industrial Temperature/Humidity Sensor -40 to 185°F (-40 to 85°C)



E-STHSB-N4085IND-x

- Applications from -40 to 185°F (-40 to 85°C) and 0 to 100% non-condensing relative humidity.
 - Accuracy:
 - $\pm 0.7^{\circ}\text{F}$ ($\pm 0.4^{\circ}\text{C}$) at 14 to 185°F (-10 to 85°C)
 - $\pm 1.6^{\circ}\text{F}$ ($\pm 0.9^{\circ}\text{C}$) at -40 to 14°F (-40 to -10°C)
- $\pm 3\%$ relative humidity at 0 to 80% non-condensing RH and 86°F (30°C)
 - $\pm 4.5\%$ relative humidity at 80 to 100% non-condensing RH and 86°F (30°C)
- Available lengths for attached CAT5e cable: 10/25/50/100 feet.

RTD Temperature Transmitters

100 Ohm Platinum RTD Transmitter



E-RTDT-140
E-RTDT-240

- Available temperature ranges:
 - E-RTDT-140: -20 to 140°F (-28 to 60°C).
 - E-RTDT-240: 30 to 240°F (-1 to 115°C).
- Accurate to within $\pm 0.8^{\circ}\text{F}$ ($\pm 0.45^{\circ}\text{C}$).
- Configuration: 2-wire connection
- Sensor Element: 100Ω platinum
- Signal Output: 4-20 mA, loop-powered
- Requires the E-S420MA and an RTD sensor probe to operate with the E-2D/5D/16D.

High-Accuracy Platinum RTD Transmitter, -328°F to 1562°F



E-RTDT-1562

- Use to connect 1000 platinum RTD temperature sensors to the E-2D/5D/16D.
- Temperature range: -328 to 1562°F (-200 to 850°C)
 - When used with the E-2D/5D/16D, the supported range is -89 to 738°F (-67 to 392°C). Call an NTI product consultant to have the range expanded on the ENVIROMUX system.
- Accurate to within $\pm 0.2^{\circ}\text{F}$ ($\pm 0.1^{\circ}\text{C}$)
 - If the connected RTD sensor does not support this high of accuracy, the system will revert to the accuracy of the sensor.

Environmental Sensors

RTD Temperature Sensors

All-Purpose 100 Ohm RTD Sensor, -67°F to 221°F



- Rugged, point-sensitive waterproof sensor with 9" (229 mm) 304 stainless steel probe and brass fitting.
 - Brass fitting with 1/2" NPT male thread.
- Applications from -67 to 221°F (-55 to 105°C).
- Accurate to within $\pm 0.27^\circ\text{F}$ ($\pm 0.15^\circ\text{C}$).

E-RTDS-A221

- 100 Ohm Pt 385 curve.
- Requires the E-RTDT-140/240 and E-S420MA-24V to operate with the E-2D/5D/16D.

Rugged Encapsulated 100 Ohm RTD Sensor, -30°F to 230°F



- 0.18" round, 0.50" long housing.
- Applications from -30°F to 230°F (-34°C to 110°C).
- Accurate to within $\pm 0.6^\circ\text{F}$ ($\pm 0.33^\circ\text{C}$).
- 100 Ohm Pt 385 curve.
- 8 feet, 24 AWG 2-wire leads

E-RTDS-ER230

- Requires the E-RTDT-140/240 and E-S420MA-24V to operate with the E-2D/5D/16D.

Pipe 100 Ohm RTD Sensor with Adjustable Ring, -58°F to +540°F



- Monitor temperature on pipe surfaces.
- Applications from -58 to 540°F (-50 to 280°C).
- Accuracy:
 - At 32°F (0°C), $\pm 0.54^\circ\text{F}$ ($\pm 0.3^\circ\text{C}$)
 - At 212°F (100°C), $\pm 1.44^\circ\text{F}$ ($\pm 0.8^\circ\text{C}$)

E-RTDS-PAR540-xxIN

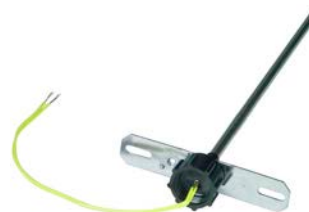
- 100 Ohm Pt 385 curve.
- 6 ft (1.83 m) 3-wire lead.

Mini Probe 100 Ohm RTD Sensor, -67°F to 240°F



- 0.19" (4.8 mm) round x 0.50" (13 mm) long stainless steel housing.
 - Applications from -67 to 240°F (-55 to 115°C).
 - Accurate to within $\pm 0.27^\circ\text{F}$ ($\pm 0.15^\circ\text{C}$).
 - 100 Ohm Pt 385 curve.
- E-RTDS-MP240**
- Requires the E-RTDT-140/240 and E-S420MA-24V to operate with the E-2D/5D/16D.

Duct 100 Ohm RTD Sensor, -67°F to 240°F



- Rugged, waterproof sensor with 9" (229 mm) 304 stainless steel probe with 4" (102 mm) electrical strap and a nylon fitting.
 - Nylon fitting with 1/2" NPT female thread.
 - Applications from -67 to 240°F (-55 to 115°C).
 - Accurate to within $\pm 0.27^\circ\text{F}$ ($\pm 0.15^\circ\text{C}$).
 - 100 Ohm Pt 385 curve.
- E-RTDS-D240**
- Requires the E-RTDT-140/240 and E-S420MA-24V to operate with the E-2D/5D/16D.

Liquid & Chemical Detection Sensors

Low-Cost Liquid Detection Sensor, Rope-Style



E-LD-LCx-y

- Detects any conductive liquid or moisture.
- Minimum puddle: 0.06" (1.5 mm) diameter.
- Available water sensor cable (x) lengths: 1/10/50/100/200/400/600 feet.
 - Material: PVC twisted pair with stainless 316 elements
 - Diameter: 0.14" (3.5 mm)
- Available 2-wire cable (y) lengths: 5/10/20/50/100 feet.

Liquid Detection Sensor, Plenum Rope-Style



E-LDx-y

- Detects any conductive liquid or moisture.
- Minimum puddle: 0.6" (15 mm) diameter.
- Detects liquid depth >0.1" (2.5 mm).
- Available water sensor cable (x) lengths: 1/10/50/100/200/400/600/800/1000 feet.
 - Plenum rating: CL2P (UL)
 - Diameter: 0.25 in (6.35mm)
- Available 2-wire plenum cable (y) lengths: 5/10/20/50/100 feet.

Environmental Sensors

Liquid & Chemical Detection Sensors

Chemical Detection Sensor



E-CDx-y

- For detecting the presence of chemical liquid.
 - Reliably senses acids, bases, and other conductive liquids.
- Detects liquid depth >0.1" (2.5 mm).
- Minimum puddle: 0.6" (15 mm) diameter.
- Available chemical sensor cable (x) lengths: 1/10/50/100 feet.
- Available 2-wire cable (y) lengths: 5/10/20/50/100 feet.

Legacy Chemical Detection Sensor



E-CDSx-y

- For detecting the presence of chemical liquid.
 - Reliably senses acids, bases, and other conductive liquids.
- Detects liquid depth >0.1" (2.5 mm).
- Minimum puddle: 0.6" (15 mm) diameter.
- Voltage and current:
 - Open Circuit: 5VDC max @ 1µA.
 - Closed circuit: <300mV @ 10.7mA.

Spot Liquid Detector with Built-In Visual & Audible Alarm



E-SLDO-A

- Use to detect conductive fluids in confined areas
- Water level detection range: 0.03 to 0.53" (0.79 to 13 mm).
- Audible alarm signal: 85 dB at 1 foot distance.
- Red LED for visual alarm signal.
- Cable length: 4.9 ft (1.5 m).

Outdoor Oil Leak Detection Sensor



E-SOD-3M

- Use to detect oil or non-conductive liquids in outdoor locations or in areas that are susceptible to leaks.
- The sensor includes two liquid detectors; one looking for conductive liquids (e.g. water), and the other looking for non-conductive liquids (e.g. fuel oil, diesel fuel).
- Normally-open alarm contact.
- IP 65 rated.
- Cable length: 9.84 ft (3m).

Under Carpet Leak Detector



E-UCLD-x

- Use to detect conductive fluids and moisture under carpets.
- Available 2-wire plenum cable lengths: 10/25/50/100/200/400/600/1000 feet.

Legacy Liquid Detection Rope Sensor



E-LDSx-y

- For detecting water presence and warning of flooding.
- Detects liquid depth >0.1" (2.5 mm).
- Minimum puddle: 0.6" (15 mm) diameter.
- 100% waterproof electronics.
- Detects any liquid or moisture, except deionized water.

Spot Liquid Detector, Point Leak Detection Sensor



E-LD-SPDT

- Features gold-plated probes and microchip technology for dependable detection of conductive liquids.
- Adjustable detection level.
 - Probe height adjustable 0" to 1.5" (0 to 38mm)

Compact-Size Spot Liquid Detector, Point Leak Detection Sensor



E-SLDO-14

- Use to detect fluids in confined areas.
- One generic relay output
- Adjustable detection level.
 - Probe height adjustable 0" to 0.75" (0 to 19mm)
- Cable length: 14 feet

IP68 Submersible Spot Liquid Detector



E-SLDO-IP68

- Use to detect conductive fluids in confined areas.
- Water level detection range: 0.03 to 0.53" (0.79 to 13 mm).
- DPDT alarm contacts.
- Red LED for visual alarm signal.
- Current consumption: 30mA typical, 85mA maximum @ 12VDC.

Tape-Style Liquid Detector



E-TLD-x

- Uses a self-adhesive sensor tape with copper fiber electrodes and a durable netted cover for dependable detection of conductive liquids.
- Continuous tape integrity self-check.
- Floor or under-pipe mounting.
- Minimum puddle: 0.125" (3 mm) diameter.
- Available tape sensor lengths: 10/25/50/100 feet.

Environmental Sensors

Liquid & Chemical Detection Sensors (continued)

Plastic Vertical Liquid Level Float Switch



E-LLS-PF

- Vertically mounted float switch – install in the top or bottom of the tank.
- Magnets within the float actuate a highly reliable and repeatable hermetically sealed reed switch as the float rises and lowers with liquid level.
- Single-pole single-throw (SPST) circuitry.
- IP68-rated water and dust protection.
- Max pressure: 72.5 psi (0.5 MPa)

Ultrasonic Level Transmitter



E-ULT

- Compact sensor with 2" (51 mm) dead band and beam width optimized for small tanks 49" (1,245 mm) or less.
- Provides two-wire 4-20 mA analog output.
- Includes Fob USB interface tool for configuring the transmitter.
- Requires the E-S420MA-24V to operate with E-2D/5D/16D.

Plastic Vertical Liquid Level Float Switch



E-LLS-SF-xxCM

- Vertically mounted float switch – install in the top or bottom of the tank.
- Magnets within the float actuate a highly reliable and repeatable hermetically sealed reed switch as the float rises and lowers with liquid level.
- Single-pole single-throw (SPST) circuitry.
- IP68-rated water and dust protection.
- Max pressure: 72.5 psi (0.5 MPa)

Intrinsically Safe Ultrasonic Level Transmitter, 25' Range



E-ULT25IS

- Calculates distance, level, flow, and volume in linear and non-linear tanks.
- Suitable for use in hazardous areas - Class 1 Division 1, intrinsically safe rating.
- Operating Range:
 - 1 to 25 ft for liquids
 - 1 to 10 ft. for solids
- Provides two-wire 4-20 mA analog output.
- IP65 rated housing

Smoke Detection Sensor

Smoke Detection Sensor – 120VAC Wire-In with Battery Backup



E-SDS-120V

- Ionization smoke detector.
- Applications from 40°F to 100°F (4°C to 38°C).
- Front loading battery door.
- One button design for easy testing and HUSH mode activation control.
- Voltage supply: 120VAC.
- Audio alarm: 85dB at 10ft.
- Links with up to 24 devices.
- Use compatible relay (E-RLY-SDS120V) for connection to the ENVIROMUX system.
- Contact ratings: 10A at 120VAC, 5A at 30VDC.

Low-Cost Smoke Detection Sensor – CE Approved



E-SDS-CELC

- Photoelectric smoke detector.
- Smoke sensitivity: 0.5 dB/m ±0.1 dB/m.
- Applications from 14 to 122°F (-10 to 50°C).
- Operating temperature: 14 to 122°F (-10 to 50°C).

Smoke Detector with Built-In Fixed-Temperature 135°F (57°C) Heat Sensor – UL Approved



E-SDS

- Photoelectric smoke detector.
- Smoke sensitivity: 0.98-2.4%/ft.
- Built-in 135° F (57° C) thermal heat sensor.
- Operating temperature: 14 to 122°F (-10 to 50°C).

Smoke Detector with Built-In Fixed-Temperature 135°F (57°C) Heat Sensor – UL Approved, TAA Compliant



E-SDS-TAA-V2

- Photoelectric smoke detector.
- Smoke sensitivity: 0.98-2.4%/ft.
- Built-in 135° F (57° C) thermal heat sensor.
- Voltage supply: 8-35VDC.

Environmental Sensors

Gas Detector/Sensors

Gas Detector – Methane, Butane, Propane



E-GD-MBP

- Use to detect leaks of combustible gas (methane, propane, butane, acetylene, etc.)
- Continuous air monitoring.
- Audible alarm signal: 94 dB at 1 foot.
- Relay specifications: level selectable, normally open or normally closed, 250V AC, max 5A.

Carbon Dioxide Sensor, CO2



E-CO2

- Measures CO2 in a range of 0 to 2,000 ppm.
- 0 to 5 VDC output.
- Continuous automatic air pressure compensation.
- Requires the E-S5VDC sensor converter to operate.

Hydrogen Sulfide Detector



E-H2S

- Use to monitor the presence of Hydrogen Sulfide from failed UPS (uninterrupted power supply) lead acid batteries, in paper mills, refineries, waste disposable facilities, etc.
- Measures H2S in a range of 0 to 50 ppm.
- 5A SPDT fan relay controls exhaust fans, valves, or louvers.
- Alerts are based solely on the measured H2S levels reported by the E-H2S.

Carbon Monoxide Detector, CO



E-CMD

- Continuous air monitoring.
- Pre-set alarm points alert at:
 - 70 ppm after 60 to 240 minutes
 - 150 ppm after 10 to 50 minutes
 - 400 ppm after 4 to 15 minutes

Hydrogen Gas Detector



E-H2

- Use to detect leaks of hydrogen gas in battery monitoring/charging rooms, substations, uninterruptible power supplies (UPS), and hydrogen fueled back-up power systems.
- Alarm set point: 10% LEL hydrogen gas.
- SPDT Alarm and normally-closed output relay.

Optical Dust Sensor



E-DUST

- Detects the presence of dust and fine particles using an infrared emitting diode (IRED) and phototransistor.
- Able to distinguish smoke from house dust.
- RJ45 connector.
- Voltage supply: 5VDC
- Current consumption: < 50mA.
- Support CAT5/5e/6 cable to 1,000 ft (305 m).

Air Flow/Velocity Sensors

Air Flow Sensor



E-AFM

- Reacts to any condition causing insufficient flow of air.
- Switch contact is closed when air flow is >8.2 ft/s.
- Connection: 2x single strand AWG26, length 18 in.

Air Velocity Sensor



E-AV-K

- Reliable sensor for measurement of air velocity.
- Flow range: 0-2000 ft/min (0-10 m/s).
- Accuracy: ±60 ft/min (0.3 m/s) + 4% of measured value.
- Requires the E-S5VDC sensor converter to operate.

Low-Cost Air Velocity Sensor



E-AV-LC-7

- Reliable sensor for measurement of air velocity.
- Flow range: 0-9843 ft/min (0-50 m/s).
- Accuracy: ±98 ft/min (±0.5 m/s) from 0 to 2953 ft/min (0 to 15 m/s).
- Length: 7 feet.
- Includes an RJ45 coupler to extend the sensor up to 1,000 feet using CATx cable (minimum 24AWG).

Environmental Sensors

Weather & Outdoor Sensors

IP65 Outdoor Temperature Sensor



E-STS-0

- Applications from -40 to 185°F (-40 to 85°C).
- Accurate to within ±0.9°F (±0.5°C).
- Weatherproof enclosure.
 - IP65-rated water and dust protection.

Barometric Pressure Transmitter



E-BPT

- Use for determining atmospheric air pressure.
- Pressure range: 20.8 to 32 in Hg (10.2 to 15.7 psi)
- Accuracy: ± 0.14 Hg (±0.07 psi)
- Repeatability: ± 0.03 Hg (± 0.014 psi)
- Pressure Hysteresis: ± 0.02 Hg (± 0.01 psi)
- Long-Term Stability: ± .014 Hg/year (±0.007 psi/year)
- Requires the E-S420MA-24V to operate with E-2D/5D/16D.

Wind Speed Sensor/Anemometer



E-WSS

- Rugged anemometer
- 3-cup rotor pressed on a stainless steel shaft
- Reed switch and magnet providing one pulse per rotation
- Rotor diameter: 5 inches
- Speed range: ~ 3 mph to 125+ mph (~5 kph to over 200 kph)
- Rugged Delrin body with bronze and Rulon bushings
- Flat aluminum mounting bracket with 2 holes. Designed to be mounted on top of a pole or bracket.
- 100 feet of exterior grade wire
 - Maximum cable length: 1000 ft (305m)
- Intended for outdoor use where icing is not expected.

Pressure Sensor Transmitters

Pressure Sensor Transmitter, 0 to 500 psi



E-PST500

- Measure the pressure in a multitude of processes from hydraulic oils to chemicals.
- Requires the E-S5VDC sensor converter to operate with E-2D/5D/16D.
- Service: Compatible with gases and liquids
- Wetted Materials: Type 316L SS
- Accuracy: 1.0% FS; 0.5% RSS

Intrinsically Safe Pressure Sensor Transmitter



E-PSTxxxIS

- Monitor pressures in explosive atmospheres with barrier.
- Suitable for use in hazardous areas - Class 1 Division 1, intrinsically safe rating.
- Process Connection: 1/8" BNPT male 316 stainless steel.
- Requires the E-S420MA-24V to operate with E-2D/5D/16D.